

## Lab 4 Guide

### Retrieval Practice and Learning

This week's lab revisits the **pivot tables** introduced in Lab 2B. Evidence of Discrimination. Recall that pandas pivot tables take 3 main parameters:

- **values** - the dependent variable(s) of interest
- **index** - the independent variable(s) of interest
- **aggfunc** - how you want to summarize your data (e.g. sum, mean, count, min/max)

In lab 3B, we saw that pivot tables can also take another parameter called **columns**, which **groups** data based on the different values of the parameter.

Here are some questions to consider for **Question 1**:

- What would the **x-axis** (values) and **y-axis** (index) be?
- Which aggregation function best summarizes the overall scores from both groups?

Here are some questions to consider for **Question 2**:

- What are the **TS.1**, **TS.2**, and **TS.avg** columns?
- Which one would be the most appropriate to use for the y-axis?

For **Question 3**, you can **plot** values from Questions 1 and 2 **side by side** by passing in both columns as the values parameter:

```
... , values = [ 'col1' , 'col2' ] , ...
```

You may find `crosstab()` more useful than `pivot_table()` for **Question 4**.